

ABSTRACT OF THE DISCLOSURE

[0041] A turbine engine rotor component, such as a compressor or turbine disk or seal element, is protected from corrosion by depositing an aluminum or chromium coating on the component. The deposition can be performed by a vapor deposition process, such as metal organic chemical vapor deposition (MOCVD), to a coating thickness of from about 0.2 to about 50 microns, typically from about 0.5 to about 3 microns. In one embodiment, the method is conducted in a vapor coating container having a hollow interior coating chamber, and includes the steps of loading the coating chamber with the component to be coated; and flowing a tri-alkyl aluminum or chromium carbonyl coating gas into the loaded coating chamber at a specified temperature, pressure, and time to deposit an aluminum or chromium coating on the surface of the component. The coated component is then heated in a nonoxidizing atmosphere to a specified temperature to form an aluminide or chromide coating on the surface. The coated component is typically then heated or maintained at an elevated temperature in the presence of oxygen to form an oxide coating on the surface of the component.